

# New species of Phlaeothripidae (Thysanoptera) from South Africa

by

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In the following paper seven species are described as new; in one case, *Kleothrips*, the genus is an addition to the South African fauna. I am greatly indebted to Professor Faure for allowing me to study and describe his material of *Hoplandrothrips* and to use the notes which he had prepared for the species *Hoplandrothrips arrhenus* sp. n., *H. edentatus* sp. n. and *H. flavidus* sp. n.

All figures are original and were drawn by the author with the help of a projection apparatus.

## Key to the South African species of *Hoplandrothrips* Hood.

### *Females.*

- A. Fore femur armed with two teeth near apex, and fore tibia armed with one near middle of inner margin; head longer, 1.66—1.80 times as long as greatest width across cheeks; antennal segment III narrower, 1.90—2.1 times as long as greatest width, IV more than twice as long as greatest width; anterior angular setae of the prothorax very long, 180—273 $\mu$  in length.
- B. Antennal segment III less than 1.96 times as long as greatest width; segment IV 2.17—2.30 times as long as greatest width; abdominal tergum I with four (sometimes three) pores; reticulations of tergum I more or less of equal size throughout  
*arrhenus* sp. n.
- BB. Antennal segment III 1.97—2.10 times as long as greatest width; segment IV 1.98—2.17 times as long as greatest width; abdominal tergum I with only two pores; reticulations of tergum I distinctly smaller and relatively narrower in the middle  
*vansoni* sp. n.
- AA. Fore femora and tibiae not armed; head shorter, less than 1.4 times as long as greatest width across cheeks; antennal segment III broader 1.30—1.64 times as long as greatest width; IV broader, 1.48—1.82 times as long as greatest width; anterior angular setae of prothorax shorter, less than 100 $\mu$ .

- C. Colour pale yellow; post ocular setae short  $46-51\mu$  long; eyes small, less than 0.25 the length of the head; no conspicuous cheek spines  
*flavidus* sp. n.
- CC. Colour at least brownish yellow, usually brown; post-ocular setae longer, more than  $70\mu$  long; eyes larger, at least 0.3 the length of the head; at least one conspicuous cheek spine present.
- D. Tube shorter  $0.64-0.67$  the length of the head and less than twice as long as width at base; prothoracic setae shorter, posterior marginal less than  $90\mu$  long; post-ocular seta shorter, less than  $80\mu$ ; pores between the two microsetae on tergum II of abdomen usually absent.  
*landolphiae* sp. n.
- DD. Tube longer  $0.74-0.89$  the length of the head and more than twice as long as width at base; prothoracic setae longer, posterior marginal more than  $100\mu$  in length; post-ocular seta longer, over  $95\mu$  in length; two pores always present between the two microsetae on tergum II of abdomen  
*edentatus* sp. n.

#### Males.

- A. Antennal segment III at least 1.7 times as long as greatest width; segment IV slightly more than twice as long as greatest width.
- B. Antenna paler, segments III—V pale yellow, VI paler for at least the basal half; anterior marginal setae of prothorax very short and pointed, distinctly shorter than any other prothoracic seta; at least two distinct, strong cheek spines present ( $36-41\mu$  long).  
*arrhenus* sp. n.
- BB. Antennae darker, segments III—V shaded with brown, VI completely brown; anterior marginal setae of prothorax knobbed, only slightly shorter than the posterior marginal setae; three only moderately prominent cheek spines present. *natalensis* (Trybom).
- AA. Antennal segment III broader, about 1.55 times as long as greatest width; IV broader,  $1.64-1.77$  times as long as greatest width.
- C. Fore femur and tibia unarmed; tube longer, at least 2.1 times as long as width at base and  $0.71-0.83$

the length of the head; tergum II of abdomen always with two pores between the two microsetae.

*edentatus* sp. n.

- CC. Fore femur armed with at least one tooth near apex, and tibia usually with a small tooth at basal third on inner margin; tube shorter, 1.75—1.90 times as long as width at base and 0.63—0.68 the length of the head; tergum II usually with no pore between the two microsetae.

*landolphiae* sp. n.

**Hoplandrothrips arrhenus** sp. n. (Pl. I, Fig. 1, 2).

*Female.*

(Macropterous).

Length about 3.1 mm. General colour bright yellow-brown. Head yellowish brown, paler at the extreme base; post-ocular setae and cheek spines distinctly brownish yellow. Prothorax the same as the head but the colour rather blotchy. Pterothorax with sides similar to the head; mesonotum yellowish brown, paler in the middle; metanotum bright yellow. Abdomen paler yellowish brown at the base, the segments darker laterally and gradually becoming darker towards the apex of the abdomen; segment IX more or less the same colour as the head; tube yellowish brown, gradually becoming paler apically. Antennal segment I, basal half pale brownish yellow, the apical half yellowish brown; II yellowish brown at the base, the rest pale brownish yellow; III—V pale yellow, paler at the base, V a shade darker than the preceding two segments; VI pale yellow, shaded with pale brown for the apical third or half; VII and VIII yellowish brown, VII yellowish at base. Fore wing with a very slight brownish-yellow tinge, scale pale brown as well as a short line reaching the second sub-basal seta; hind wing colourless except for a pale brown median line along about the basal half. All trochanters pale brownish yellow, fore pair the darkest; fore femora bright yellow brown, darker along the inner margin; fore tibiae bright yellow, darker at the base, especially along the outer margin; fore tarsi bright yellow, middle and hind femora yellowish brown, paler at the apex; middle and hind tibiae paler than the femora, especially at the base and the apex; tarsi pale brownish yellow. Prothoracic and pterothoracic setae distinctly brownish yellow; abdominal setae yellow except the terminals, which are brown. Ocellar pigment red. Mesodermal pigment appears to be greyish.

*Head* long, about 1.7—1.9 times as long as its greatest width, broadest at middle, rounded to the eyes and more gently to near base, thence slightly diverging, forming a neck-like constriction which is distinctly narrower than the greatest width across the eyes or about

0.9 the greatest width of the head, set with 3—5 large and 4 to 7 smaller pointed spines, placed on distinct warts, the hindmost the longest about 50 to 66 microns long; entire surface of head practically smooth, occipital and lateral regions with only indistinct cross striations, along posterior margin of eyes distinctly reticulate, genae practically smooth without obvious serrations; vertex weakly produced, not overhanging, and smooth. Post-ocular setae 1.2—1.3 times the length of the eyes, dilated at the apex, situated about half as near to the side of the head as to the eye, their distance apart about twice the interval of the eyes. Eyes closely faceted, about 0.3 the length of the head and about 0.8 as wide as their interval; outer anterior angle weakly curved. Ocelli not equidistant, those of the posterior pair about 0.63 times as distant from each other as from the median ocellus, their posterior margin more or less opposite the middle of the eye. Antennae long, about 1.5 times the length of the head, slender; segment III clavate, 1.90—1.96 times as long as its greatest width, distinctly sinuate on inner surface, pedicel curved outward at the base; IV about 2.2—2.3 times as long as its greatest width, distinctly longer than III; V—VIII more slender than the preceding two segments; V 2.9 times as long as wide; VIII fairly closely united to VII; shape of segments shown in figure; sense cone distribution on inner (outer) surfaces: III 1 (2), IV 2 (2 + 1), V 1 (1 + 1), VI (1 + 1), VII one on dorsum; rather slender especially towards apex of antenna; dorsal outer cone on III 41 microns long. Mouth cone attaining about the middle of the prosternum, labium broadly rounded, slightly surpassed by the acute labrum.

*Prothorax* about 1.80—1.94 times as broad across the coxae as the median length of the pronotum, which is 0.71—0.77 that of the head; pronotum smooth except the extreme base, which has indistinct striations. All usual setae present; anterior marginals very small and pointed, about 15 microns long; all the others very long, blunt (mere traces of a knob present), epimerals and posterior marginals placed on slight protuberances, their lengths in microns as follows: anterior angulars 250—275, mid laterals 270—310, epimerals 215—225, posterior marginals 210—225, coxals about 100. Pterothorax wider than the prothorax, widest anteriorly, with a projection at each anterior angle; mesonotum very faintly cross-reticulate except posteriorly, i.e. behind the spines, where the reticulations are distinct; the middle reticulations are hardly visible; metanotum smooth on the slightly raised triangle; sides of triangle reticulate and posterior portion of metanotum more feebly so; reticulations at sides longitudinal and the rest more regular polygonal. Wings slender, widest at base with sides practically straight, fore pair with 17—21 accessory hairs on hind margin; subbasal setae measurements in microns: (a) 35—65, (b) 77—105, (c) 45—60; (a) and (c)

pointed, (b) knobbed or blunt. Fore legs extremely enlarged, coxa reticulate at the base, femur long and broad, armed with a pair of teeth at the apex, tibia short and very stout, armed with a stout curved tooth at the middle on inner margin, inner apical angle produced, provided with a small plate, tarsus with a very large curved tooth about 1.5 times as long as the width of tarsus; middle and hind legs normal to the genus except for a number of stout, dark, curved spines on the upper surface of the femora.

*Abdomen* distinctly narrower than the fore portion of the pterothorax, widest at segment II, segments distinctly polygonally reticulate laterally and at anterior margin, indistinctly so at the middle and smooth along the posterior margin; tergum I with four pores (sometimes three), distinctly reticulate, the reticulations more or less equal in size and shape throughout, indistinctly smaller in the middle; pores on terga III—VI 43—61 microns apart. Tube reticulate ventrally at base, about 0.65—0.68 the length of the head and about 2.5 times as long as width at base (which is about twice that at the apex), sides nearly straight; lateral setae on segment IX stout, usually slightly expanded, the longest seta, 230—250 microns long, distinctly shorter than tube; terminal setae 200—215 microns long, shorter than the longest on IX.

*Measurements* of female (holotype) in mm. — Length about 3.07; head length 0.430, width across eyes 0.240, greatest width across cheeks 0.260, least width at base 0.240; eye, length 0.140, width 0.075, interval 0.090; ocelli, diameter of median 0.031, of posterior 0.031, interval between posterior pair 0.035, distance from median to posterior 0.030; post-ocular setae, length 0.165, distance apart 0.185; longest cheek spine, length 0.060; prothorax, median dorsal length 0.330, width (including the coxae) 0.610; prothoracic setae lengths, anterior angular 0.265, mid lateral 0.310, epimeral 0.215, posterior marginal 0.210, coxal 0.100; pterothorax greatest width 0.630; fore wing, length 1.500, greatest width at base 0.140, least width at middle 0.120; subbasal setae lengths, (a) 0.035, (b) 0.015, (c) 0.045; abdomen, greatest width (segment II) 0.565; tube, length 0.290, greatest width at base 0.115, least width at apex 0.055; longest seta on segment IX, length 0.230; longest terminal seta, length 0.210.

Antennal segments	1	2	3	4	5	6	7	8
Length in microns	61	56	110	117	110	87	74	43
Width in microns	64	46	56	54	38	33	26	18
Total length of antenna	.... 0.658 mm.							

#### *Male.*

#### (Macropterous).

Length about 2.8 mm. — In colour very similar to the female except that it is generally duller, and the forelegs are darker,

especially the tibiae which are similar to those of the middle and hind legs; all tarsi pale brownish yellow; otherwise like the female. Structurally there is great similarity between the two sexes; the differences being: male much smaller, forelegs not enlarged to such a great extent; fore femora armed with only the outer tooth, the inner represented by a thickening of the integument; fore tibiae relatively longer and narrower, the tooth nearer to the base and the anterior projection weaker; fore tarsal tooth much smaller, not quite as long as the width of the tarsus. Coxal setae shorter and pointed; all prothoracic setae relatively shorter. Antennal segment III broader, 1.7 times as long as its greatest width. Head relatively shorter 1.52 times as long as greatest width; ocelli more or less equidistant. Prothorax distinctly shorter, 0.61 the length of the head and including the coxae 2.13 times as wide as long. Tube longer, 0.74 the length of the head and 2.72 times as long as width at the base; terminal setae longer, subequal to the longest seta on segment IX. Fewer accessory hairs on hind margin of forewing, 9—13 in number.

*Measurements* of male (allotype) in mm. — Length about 2.83; head, length 0.330, width across eyes 0.195, greatest width across cheeks 0.210, least width at base 0.180; eye, length 0.107, width 0.061, interval 0.077; ocelli, diameter of posterior 0.018, of median 0.023, distance from median to posterior pair 0.033, interval between posterior pair 0.031; post-ocular setae, length 0.115, distance apart 0.160; prothorax, median dorsal length 0.200, width (including the coxae) 0.425; prothoracic setae lengths, anterior angular 0.145, mid-lateral 0.155—0.170, epimeral 0.140, posterior marginal 0.140, coxal 0.045; pterothorax, greatest width 0.440; fore wing, length 1.012, greatest width at base 0.110, least width at middle 0.085; subbasal setae, lengths (a) 0.038, (b) 0.084, (c) 0.054; tube, length 0.245, greatest width at base 0.090, least width at apex 0.043; longest seta on segment IX, length 0.195; longest terminal seta, length 0.195.

Antennal segments	1	2	3	4	5	6	7	8
Length in microns	51	51	82	87	77	66	59	36
Width in microns	51	38	49	43	33	31	26	15

Total length of antenna ... 0.509 mm.

Described from 31 females and 7 males, all macropterous, collected 17—VII—1930 by Professor J. C. Faure, in curled leaves of *Syzygium cordatum* Hochst. (= *Eugenia cordata* Laws.) at Contra Costa, Chai, Portuguese East Africa.

The only other known species of *Hoplandrothrips* in which the female has armed forelegs are *gynandrus* Hood and *virago* Hood from North America and *vansoni* sp. n. from the Transvaal; the differences between the last named and present species are fully discussed under that species; from the first two it may easily be distinguished by the forelegs of the female being much more

enlarged (reminding one of *Arrhenothrips*), by the much longer prothoracic setae, the paler antennae, and the very weakly developed reticulation, especially on the head. With regard to the female, the present species may be separated from all other species in which the female is known by the greatly enlarged forelegs and armed fore femora and tibiae and the very long prothoracic setae; the male may be separated from all known African species except *natalensis* (Trybom) by the presence of only one tooth on the fore femur and in addition it may be separated from *hystrix* Bagnall, from Sierra Leone, which appears to be closely related to it by the shorter prothoracic setae, fewer cheek spines and the fewer accessory hairs on hind margin of the fore wing (9—13 compared with 18—21). From *natalensis* (Trybom), which also has only one tooth on the fore femur, it may easily be separated by the paler and differently shaped antenna, the longer head, the much longer and differently shaped prothoracic setae (except the anterior marginals) and the stronger cheek spines. In addition the present species may be separated from the other South African species by the characters given in the key. I am much indebted to Dr. Hood and Dr. Priesner, who compared this species and made suggestions to Professor Faure.

***Hoplandrothrips vansoni* sp. n. (Pl. I, Fig. 3, 4).**

*Female.*

(Macropteros).

Length about 3.8 mm. — General colour bright yellow brown to golden brown. Head yellowish brown, paler at the posterior margin of the eyes and between the eyes, and the basal fifth bright brownish yellow, gradually merging into the general colour of the head. Prothorax more brown than the head except in the middle where it is of a bright brownish yellow. Pterothorax bright brownish yellow, more yellow than the head, membranous portions bright yellow. Abdominal segments I—VII the same colour as the sclerotised portions of the pterothorax, darker laterally; VIII the same as the head and IX the same as the darker portion of the prothorax; tube, at the base, the same as IX, gradually becoming paler towards the apex. All setae distinctly shaded with brownish yellow, those on the abdomen (except the terminals) paler than the rest. Fore wing slightly tinged with pale yellowish brown, scale and small patches at the base pale brown; hind wing the same as the fore wing, with a pale brown line (darker in the middle of the wing) extending slightly past the middle of the wing, fore margin darker than the rest of the wing, especially near the middle. Fore legs coloured as follows: coxae and femora brownish yellow, about the same as the base of the head, outer basal angle of femur more yellow, apex

merging to bright yellow; tibiae and tarsi bright yellow, the former, except on the outer basal angle, hardly tinged with brown at the base. Middle and hind legs similar, femora dark yellow brown, paler at the base and the apex; tibiae yellowish brown, paler at each extremity, distinctly paler than the femora; tarsi and trochanters brownish yellow. Antennal segment I yellowish brown, paler than the head; II brownish yellow, the brown more pronounced on the inner margin (I and II may be more or less similar and just a shade darker than III); III—V clear yellow, paler at the base, V slightly darker than the preceding two; VI yellow tinged with brown on the apical half; VII and VIII brown, the former yellowish at the base. Ocellar pigment red. Mesodermal pigment not visible in any of the specimens.

*Head* long, 1.7—1.8 times as long as its greatest width, broadest at the middle, rounded to eyes and more gently to near the base, thence slightly diverging, forming a neck-like constriction which is distinctly narrower than the width across the eyes or about 0.89—0.94 the greatest width of the head, cheeks set with about 4 large and 6 smaller pointed spines placed on distinct warts, the hindmost spine the longest (66—74 microns); entire surface of the head practically smooth, occipital and lateral regions only indistinctly reticulate (more distinct at the base of the head); along the posterior margin of the eyes distinctly reticulate; genae practically smooth, not showing obvious serrations; vertex weakly produced, and not overhanging, smooth. Post-ocular setae 1.06—1.25 times the length of the eye, dilated at the apex, situated about half as near to the side of the head as to the eye, distance apart about twice the interval of the eyes. Eyes closely faceted, about 0.3 times the length of the head and about 0.8 times as wide as their interval; outer margin rather strongly curved with a sharply curved anterior angle. Ocelli practically equidistant, posterior margin of posterior pair about in line with the middle of the eyes. Antennae about 1.6 times the length of the head, slender; segment III clavate, 1.97—2.1 times as long as its greatest width, distinctly sinuate on inner surface, pedicle curved outward at base; IV 1.98—2.17 times as long as its greatest width, distinctly longer than III; V 2.37—2.63 times as long as wide; VIII fairly closely united to VII; shape of the segments is shown in figure; sense cone distribution on inner (outer) surfaces: III 1 (2), IV 2 (2 + 1), V 1 (1 + 1), VI 1 (1 + 1), VII usual cone on dorsum; dorsal outer cone on III 43 microns long, those on VI much smaller than the rest. Mouth cone attaining about the middle of the prosternum, labium broadly rounded and slightly surpassed by the acute labrum.

*Prothorax* about 1.78—1.98 times as broad across the coxae as the median dorsal length of the pronotum which is 0.71—0.79 that of the head; pronotum smooth, except the extreme base which has



indistinct striations. All usual setae present, anterior marginals very much shorter, and pointed, the rest very long and slightly dilated at the tip (the coxals are also pointed), the epimerals and the posterior marginals placed on slight protuberances; their lengths in microns as follows: anterior marginals 25—60, anterior angulars 180—275, mid laterals 225—310, epimerals 170—255, posterior marginals 190—250, coxals 80—120 (the shorter belong to a much smaller specimen). Pterothorax at the anterior angles wider than the prothorax and narrowing towards the base, with a projection at each anterior angle; mesonotum faintly but distinctly cross-reticulate except in the middle and at the lateral angles where it is smooth; posterior portion, i.e. posterior to the spines, has deeper reticulations; metanotum only faintly reticulate, especially on the raised triangle which is practically smooth, the lateral reticulations longitudinal, the rest regularly polygonal. Wings slender, widest at the base, with the sides more or less straight (there is a slight indication of narrowing at the middle); fore pair with 20—23 accessory hairs on the hind margin; subbasal setae pointed, measuring in microns: (a) 45—65, (b) 75—115, (c) 35—60. Fore legs extremely enlarged; fore coxa reticulate at the base, femur very stout and long, with a pair of stout teeth at the apex; tibia short and very stout with a stout curved tooth at about the middle on the inner margin, inner apex produced, with a small plate; fore tarsus with a very large curved tooth about 1.5 times as long as the width of the tarsus. Middle and hind legs normal to the genus except for a number of stout, dark curved spines on the upper surface of each femur.

*Abdomen* distinctly narrower than the fore portion of the pterothorax, widest at segment II, segments distinctly polygonally reticulate laterally and at anterior margin, indistinctly at middle and smooth at posterior margin; tergum I with two pores, distinctly reticulate, the reticulations polygonal outwardly, becoming distinctly smaller and relatively narrower at the middle (giving the centre a raised appearance). Pores on terga III—VI 41—66 microns apart. Tube reticulate ventrally at the base, about 0.68—0.76 times the length of the head and about 2.54—2.65 as long as the width at the base (which is a little more than twice that at the apex), sides nearly straight. Lateral setae weakly expanded at the apex, except the terminals and those on IX which are pointed; dorsal pair on IX slightly expanded at tip; longest seta on IX distinctly shorter than tube, the dorsal pair usually slightly longer than the laterals, about 230—250 microns long; terminal setae shorter than those on IX, about 210—245 microns long.

*Measurements* of female (holotype) in mm. — Length about 3.76; head, length 0.420, width across eyes 0.240, greatest width across cheeks 0.250, least width at base 0.225; eyes, length 0.130,

width 0.075, interval 0.095; ocelli, diameter of median 0.033, of posterior 0.028, interval between posterior pair 0.033, distance from median to posterior 0.033; post-ocular setae, length 0.155, distance apart 0.180; longest cheek spine, length 0.066; prothorax, median dorsal length 0.320, width (including the coxae) 0.620; prothoracic setae, lengths, anterior marginal 0.030, anterior angular 0.275 mid-lateral 0.305, epimeral 0.220, posterior marginal 0.235, coxal 0.100; pterothorax, greatest width 0.630; fore wing, length 1.650, greatest width at base 0.135, least width at middle 0.110; subbasal setae, lengths (a) 0.065, (b) 0.115, (c) 0.065; abdomen, greatest width (segment II) 0.530; tube, length 0.320, greatest width at base 0.120, least width at apex 0.050; longest seta on segment IX, length 0.245; longest terminal seta, length 0.225.

Antennal segments	1	2	3	4	5	6	7	8
Length in microns	66	59	110	120	102	87	77	49
Width in microns	61	49	56	59	43	36	28	18
Total length of antenna . . . . 0.670 mm.								

Described from 7 females, all macropterous, collected by G. van Son, April 1932, on what probably was *Cryptocarya Woodii* at Marieps Mountain (alt. 5500 feet), Transvaal.

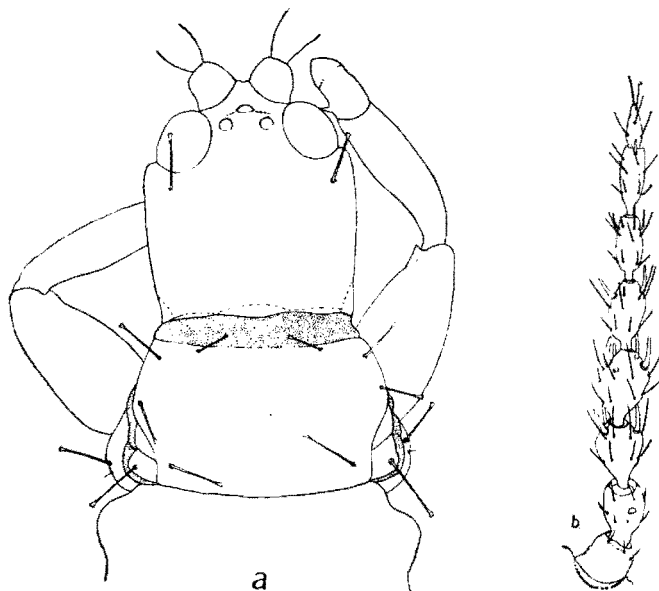
I take pleasure in naming this new species after the collector, Mr. G. van Son of the Transvaal Museum.

Although the present species is very similar to *Hoplandrothrips arrhenus* sp. n. the two species show very constant differences, the more important being: (1) the differently shaped eyes, more prominent and with a more pronounced anterior angle in the present species; (2) antennal segments differently shaped, III 1.97—2.10 times as long as greatest width in *vansoni* compared with never more than 1.96 in *arrhenus*, IV never more than 2.17 times as wide as long in the present species as compared with 2.17—2.32 in *arrhenus*, V much wider in the present form (2.37—2.63 times as long as wide, compared with about 2.9); (3) Tergum I of the abdomen with only two pores compared with four (sometimes three) in *arrhenus* and the reticulations more or less equal throughout in the former species whereas they are much smaller and differently shaped in the middle of the tergum in the present form; (4) the head appears to be relatively shorter in the present form although there is overlapping between the two; (5) in *vansoni* the coxal setae are always pointed as well as all the subbasal setae of the fore wing, whereas in *arrhenus* the coxals are slightly knobbed and at least one of the subbasal setae is expanded at the tip; there is also a slight difference in the colour. From all other known species of *Hoplandrothrips* the present form may be separated by the characters mentioned for *arrhenus*.

**Hoplandrothrips flavidus** sp. n. (Textfig. I, a and b.)*Female.*

(Macropterous).

Length about 1.2 mm. General colour pale yellow; head pale yellow, slightly darker at the base of the antennae, between the eyes. Prothorax a shade darker yellow than the head, this probably due to the presence of the mouth-cone and the fore coxae below it. Pterothorax slightly darker than the prothorax, especially at the sides; hinder portion paler, the same colour as the abdomen which is pale yellow with segments VIII and IX darker, more or less like the major portion of the pterothorax; the tube of a deeper yellow on the basal half, the apical half shaded with grey. All the legs the same colour as the head; each tarsus, however, with a dark patch near the apex on the inner side. Antennae with segments I—III pale yellow, III a shade darker towards the apex; IV pale yellow at the extreme base (on the narrow necklike portion) the rest yellow tinged with brown; V—VIII uniformly yellowish-brown. Wings with a faint tinge of yellowish-brown throughout. All setae colourless or slightly yellowish except the terminals on the tube which are shaded with brown at the base. Ocellar pigmentation red. Mesodermal pigmentation not evident except in small patches in the abdomen where it is red.



Text-fig. 1. *Hoplandrothrips flavidus* sp. n. female holotype (a) head, prothorax, and fore legs; (b) left antenna.

*Head* about 1.09 times as long as greatest width, broadest just behind the eyes, narrowed basally; cheeks subparallel in the distal half, except where they curve abruptly to the eyes; width across the eyes somewhat less than 0.9 times the greatest width of the head and somewhat less than the least subbasal width; surface of head smooth, with no reticulations; vertex not noticeably produced or overhanging. Post-ocular setae 46—51 microns long and 112—122 microns apart at the bases, strongly dilated at the apex. Eyes rounded, finely faceted, not quite one-quarter the length of the head, and dorsally about 0.75 times as wide as their interval. Ocelli close together, placed on a slight prominence, the median one within a line tangent to the fore margin of the eyes. Antennae about 1.9 times as long as the head, segments III and IV broad, V—VIII relatively narrow; III about 1.3 times as long as wide and IV 1.48; chaetotaxy and shape of the segments shown in figure; sense cones on inner (outer) surfaces of segments as follows: III 1 (2), IV 2 (2), V 1 (1), VI 1 (1+1), VII with one on dorsum; those on segments III, IV and the inner one of V large and thick, the rest relatively weaker. Mouth cone slender, reaching the base of the prosternum; the labrum acute while the labium is rounded.

*Prothorax* along the median dorsal line about 0.67 as long as the head and (including the coxae) about twice as wide as long; surface smooth; the epimeron not fused with the pronotum. All the major setae present, colourless, with broadly dilated tips; their lengths in the holotype in microns as follows: anterior marginals 33, anterior angulars 41, mid-laterals 41, epimerals 51, posterior marginals 43, coxals 43. Fore tarsus with a distinct, curved tooth medially on the inner surface; fore-femora and tibiae unarmed. Pterothorax less than 1.1 times as wide as the prothorax including the coxae. Wings slightly but distinctly narrowed in the middle, fore pair with 4—6 accessory setae; all three subbasal setae similar in shape to the prothoracic setae, their lengths in microns as follows: (a) 38—41, (b) 44—47, (c) 38—41.

*Abdomen* widest at about segments 5—7 where it is only slightly wider than the pterothorax. All segments short; I and II with one pair and III—VI with two pairs of setae dilated at the tip; VII and VIII each with one pair of pointed and one pair of dilated setae; the rest of the segments with pointed setae. Sterna II to VIII each with ten to twelve accessory setae. Tube about 0.7 times the length of the head and about 1.97 times as wide at the base as at the apex, the sides almost perfectly straight. Longest setae on segment IX, 128—130 microns long and the terminals on the tube 105—107 microns.

*Measurements* of female (holotype) in mm. Length about 1.2; head, length 0.175, greatest width (across cheeks) 0.160, width

across eyes 0.137, least width near base 0.150; eyes, length 0.049, width 0.042, interval 0.056; post-ocular setae, length 0.051, distance apart 0.112, distance from base of eye 0.018, distance from side of head 0.026—0.020; prothorax, median dorsal length 0.117, width (including the coxae) 0.235; pterothorax, greatest width 0.250; fore wing, length 0.620, greatest basal width 0.061, width at middle 0.049; abdomen, greatest width (across segment VII) 0.255; tube, length 0.125, width at base 0.061, at apex 0.031.

Antennal segments	1	2	3	4	5	6	7	8
Length in microns	36	38	43	49	43	49	46	33
Width in microns	36	28	33	33	25	22	20	11

Total length of the antenna . . . . 0.337 mm.

Described from 3 females, all macropterous, collected at Pretoria, Transvaal, 7.3.1920., among fallen leaves (*Professor J. C. Faure*).

The pale yellow colour is quite distinctive and will enable one to separate it from all other members of the genus *Hoplandrothrips*. It may, however, safely be compared with *Phlaeothrips poecilus* Hood from Tanganyika with which it agrees in a number of points but differs in the smaller size, colourless setae, broader antennal segments III and IV, and the head being smooth. The present species has been placed with some reserve in the genus *Hoplandrothrips* as the male is not known yet. As pointed out by Dr. Priesner, who was kind enough to compare the specimens, it may just as well be placed in *Pygmaeothrips* although it has a much shorter head: however, he agrees that for the present it is well placed in *Hoplandrothrips* until the male is discovered.

### ***Hoplandrothrips edentatus* sp. n. (Pl. II, Fig. 7, 8)**

#### *Male.*

#### (Macropterous).

Length about 2.1 mm. General colour brown washed with yellow. Head brown, the yellowish tinge most pronounced at the extreme base, dorsally, and round the inner margins of the eyes. Prothorax more yellow than the head except the anterior angles, anterior to the long setae, which are the same colour as the head. Pterothorax similar in colour to the prothorax except the membranous parts which are almost clear yellow. Abdomen similar to the prothorax, with the lateral portions of all segments and the whole of segment IX (except the extreme base) darker. Basal third of tube darker. All trochanters greyish yellow; all femora the same brown as the head; fore tibiae brownish yellow, darker in the middle; middle and

hind tibiae similar to the head in colour with the apices paler. Fore wing slightly tinged with brown, scale pale brown; hind wing practically colourless. Antennal segments I and II yellowish brown, II tending to be paler at the apex; III yellowish on the narrowed portion, yellowish brown on the rest (palest of segments); IV and V yellowish brown with paler bases; VI—VIII yellowish brown, slightly paler than the head. Ocellar pigment red. Mesodermal pigment not evenly distributed, where present red.

*Head* about 1.03—1.20 times as long as the greatest width, broadest behind the eyes (sometimes width across eyes the same as that behind eyes), slightly narrowed basally; cheeks subparallel, rounded to eyes and more gently to base, thence slightly diverging thus forming a neck-like constriction which is about 0.9 times the greatest width across the cheeks; cheeks set with about three pairs of yellowish spines, the hind-most the longest (13—23 microns). The entire dorsal and lateral surfaces of the head reticulate, faintly in occipital region, more strongly at sides, so that the cheeks are minutely serrate in profile; vertex slightly produced and overhanging, not reticulate. Post-ocular setae pale yellowish brown, about 1.06 times as long as eye, dilated at tip; their distance from the sides of the head about 1.6 that from the eye and their interval more than twice that of the eyes. Eyes about 0.4 the length of the head and about 0.9 times as wide as their interval. Ocelli almost equidistant, those of the posterior pair with their posterior margins slightly in front of the centre of the eyes. Antennae nearly 1.9 times the length of the head, rather broad; segment III about 1.64 times as long as its greatest width; IV usually the longest (in one case equal to and in two cases shorter than III); the shapes of the respective segments are shown in the figure; sense cones distributed on inner (outer) surfaces as follows: III 1 (2), IV 2 (2), V 1 (1 + 1), VI 1 (1 + 1), VII one on dorsum; the inner cone on III, broad and about 23 microns long; the dorsal pair on IV larger than the ventral pair; those on V—VII smaller than those on the preceding segments; a rudimentary cone is sometimes present on IV, the formula then being IV 2 (2 + 1); the outer cone on VI very much smaller than the rest. Mouth cone attaining the middle of the prosternum, labium broadly rounded, slightly surpassed by the acute labrum.

*Prothorax* about 2.8 times as broad across the coxae as the median dorsal length which is 0.58—0.65 that of the head. Pronotum smooth except for a few inconspicuous reticulations at the sides; all usual setae present, yellowish and expanded at the tip except the anterior marginals which may be much shorter and pointed (in some specimens these setae are long and expanded on one side and short and pointed on the other), their measurements in microns are: anterior marginals 20—56, anterior angulars 61—82,

mid-laterals 66—89, epimerals 84—95, posterior marginals 89—107, coxals 51—64. Pterothorax wider than the prothorax including the coxae, widest anteriorly and narrowed posteriorly; mesonotum cross-reticulate and metanotum longitudinally reticulate. Wings about 9—10 times as long as greatest subbasal width, distinctly broader in basal half than in apical half; slightly narrowed in the middle; 5—9 accessory hairs (usually 7) on hind margin of fore wing; half of the specimens with three subbasal setae, the other half with four; (a) and (b) similar to the prothoracic setae, (c) and (d) either expanded at the tip or pointed; their measurements in microns are: (a) 61—72, (b) 66—79, (c) 49—72, (d) 43—66. Fore legs moderately enlarged, *fore femora and tibiae unarmed*; fore tarsus armed with a stout tooth; middle and hind legs normal.

*Abdomen* as wide as or slightly narrower than the pterothorax, widest at segment II; pores on terga III—VI 20—41 microns apart, usually about 28 microns. Tube 0.71—0.83 the length of the head and about 2.1 times as wide at base as at apex; sides slightly convex in the middle. Both pairs of lateral setae on segments II—VIII expanded, segment IX with laterals pointed and the dorsals slightly expanded at the tip; longest seta on IX about subequal to the tube. All setae yellowish, the terminals shaded with brown at the base. Accessory bristles present on the sterna.

*Measurements* of male (Holotype) in mm. — Length about 2.06; head, length 0.210, width across eyes 0.185, greatest width across cheeks 0.185, least width at base 0.166; eye, length 0.085, width about 0.060, interval about 0.065; post-ocular setae, length 0.092, distance apart 0.135; ocelli, diameter of median 0.026, of posterior 0.020, interval between posterior pair 0.028, distance from median to posterior 0.023; longest cheek spine, length 0.018; prothorax, median dorsal length 0.123, width (including the coxae) 0.345; prothoracic setae, anterior marginal 0.041, anterior angular 0.064, mid lateral 0.066, epimeral 0.087, posterior marginal 0.089, coxal 0.051; pterothorax, greatest width 0.380; fore wing, length 0.840, greatest basal width 0.085, least width at middle 0.070; subbasal setae, lengths, (a) 0.064, (b) 0.066—0.069, (c) 0.049, (d) 0.043—0.054; abdomen, greatest width (segment II) 0.370; tube length 0.170, width at base 0.079, at apex 0.039; longest seta on abdominal segment IX, length 0.150, longest terminal seta, length 0.135.

Antennal segments	1	2	3	4	5	6	7	8
Length in microns	36	46	59	61	54	52	45	36
Width in microns	38	33	36	36	31	28	26	15

Total length of antenna .... 0.391 mm.

*Female.*

(Macropterous).

Length about 2.3 mm. — General colour similar to that of the male. Structurally the female is also essentially like the male, excepting that it is slightly larger; the tube is longer ventrally than dorsally; in all cases the anterior marginal setae of the prothorax are expanded at the tip; only three subbasal setae and never four are present on the fore wing, and the accessory hairs on the hind margin of the fore wing are usually slightly more numerous 6—10 (usually 8).

*Measurements* of female (allotype) in mm. — Length about 2.30; head, length 0.230, width across eyes, 0.215, greatest width across cheeks 0.220, least width at base 0.205; eye, length 0.096, width about 0.072, interval about 0.077; post-ocular setae, length 0.105, distance apart 0.150; ocelli, diameter of median 0.028, of posterior 0.026, interval between posterior pair 0.033, distance from median to posterior 0.036; longest cheek spine, length 0.013; prothorax, median dorsal length 0.128, width (including coxae) 0.385; prothoracic setae, anterior marginal 0.061, anterior angular 0.077—0.087, mid lateral 0.079—0.082, epimeral 0.100, posterior marginal 0.107, coxal 0.054; pterothorax, greatest width 0.415; fore wing length 0.860, greatest basal width 0.097, least width at middle 0.074; subbasal setae lengths, (a) 0.074, (b) 0.087, (c) 0.084; abdomen, greatest width (segment II) 0.400; tube, dorsal length 0.170, ventral length 0.190, width at base 0.080, at apex 0.046; longest seta on abdominal segment IX, length 0.165, longest terminal seta, length 0.150.

Antennal segments	1	2	3	4	5	6	7	8
Length in microns	38	49	69	69	56	59	54	36
Width in microns	43	34	38	43	33	29	28	15

Total length of antenna . . . . 0.430 mm.

Described from 12 males and 12 females, all macropterous, collected by C. C. Kent at Durban, Natal (9.1.1924), on *Vangueria tomentosa* Hochst.

The present species may be separated from all known African *Hoplandrothrips* by the unarmed fore femora and tibiae in the male. In addition, its short head (less than 1.2 times as long as wide) separates it from all African species except *coffiae* Bagnall and *flavidus* sp. n.; from the latter it may easily be distinguished by its colour, shape of head and shape and length of the post-ocular and pronotal setae; from the former it may be separated by the setae on abdominal segment IX being distinctly longer than the terminals, by the shape of the antenna and by the



longer pronotal setae. From *landolphiae* sp. n. it may in addition to the characters given in the key, be separated by the absence of projections on the ventral surface of antennal segments V and VI.

**Hoplandrothrips landolphiae** sp. n. (Pl. II, Fig. 5, 6.)

*Female*

(Macropterous).

Length about 2.0 mm. — General colour yellowish brown. Head yellow-brown, darker at the sides. Prothorax and pterothorax more yellow than the head; membranous parts of the pterothorax clear yellow. The base of the abdomen the same colour as the prothorax, gradually darkening towards the apex so that segment IX is the same colour as the head; each segment darker laterally; tube the same shade as the head at the extreme base and the apical half, the rest dark brown. Wings slightly tinged with yellow; the scale and the extreme base of the fore wing pale brown; hind wing with a pale brown longitudinal line extending for about the basal half of the wing; apical half of the hind margin of the hind wing pale brown. Antennal segments I and II yellowish brown, paler than the head, II paler for its apical half and darker on the inner margin; III pale yellow, with a slight tinge of brown towards the apex; IV and V pale brownish yellow, IV paler at basal half and V at about its basal third; VI yellowish brown, paler for about its basal third; VII and VIII the same shade as the head. Fore legs slightly paler than the head, the tibia paler towards the apex, the tarsus pale brownish yellow; middle and hind legs darker than the fore legs, the tibiae paler at the extreme apex; tarsi slightly darker than the fore pair. Head setae and terminal setae of the tube distinctly yellowish brown, prothoracic brownish yellow, and the rest of a yellowish colour. Ocellar pigment red; mesodermal pigment red, prominent especially in the prothorax, pterothorax and the sides of the abdomen.

*Head* short, 1.12—1.20 times as long as its greatest width, broadest just behind the eyes, cheeks more or less straight, abruptly rounded to the eyes and slightly but evenly converging to the base of the head, where the width is 0.86-0.91 that of the greatest width across the cheeks; constriction at the base practically absent; one prominent, pointed, cheek spine placed at about the basal third 13-20 microns in length, other cheek spines rudimentary; dorsal and lateral surfaces of head faintly reticulate, more distinctly so at the base, the sides and especially at the posterior margin of the eyes, occipital region practically smooth; genae minutely serrate in profile; vertex distinctly produced and overhanging, more finely reticulate than the rest of the head; post-ocular setae about 0.30-0.36 times the length

of the head and about equal to the length of the eyes, dilated at apex, situated distinctly nearer to the eye than to the side of the head, their interval twice that of the eyes. Eyes about 0.3 times as long as the head and about 0.8 as wide as their interval. Ocelli not equidistant, those of the posterior pair about 0.7 times as distant from the anterior ocellus as from each other, their posterior margins in advance of the middle of the eyes. Antennae about 1.8 times as long as the head, the segments rather broad; III 1.44-1.56 times as long as greatest width; IV 1.74-1.82 times as long as greatest width, and V 1.77-1.90 as long as greatest width; V and VI produced ventrally at apex, more pronounced in V; sense cones on inner (outer) surfaces: III 1 (2), IV 2 (2+1), V 1 (1+1), VI 1 (1+1), VII one on dorsum; outer dorsal cone on III 31-33 microns long. Mouth cone not attaining the posterior margin of the prosternum, labium broadly rounded and slightly surpassed by the acute labrum.

*Prothorax* about 2.36-2.50 times as broad across the coxae as the median length of the pronotum, which is 0.54-0.63 that of the head; pronotum smooth except its extreme base which is faintly reticulate; all usual setae present, expanded at apex, including the short anterior marginals which are placed very close to the anterior margin of the pronotum; measurements of these setae in microns as follows: anterior marginals 31-38, anterior angulars 61-64, mid-laterals about 46, epimerals about 54-66, posterior marginals 74-82, coxals 51-61. Pterothorax slightly wider than the prothorax across the coxae, fairly abruptly constricted posteriorly to form a distinct narrowing at segment I of the abdomen; mesonotum with the usual cross-reticulations, smooth in the middle; the whole metanotal triangle faintly reticulate, the reticulations regularly polygonal for about the anterior third, more longitudinal for the rest. Wings narrower at apex and in addition distinctly narrowed near the middle; fore wing with 5-8 (usually 7 or 8) accessory hairs on its hind margin; subbasal setae, lengths: (a) 54-66, (b) 61-69, (c) 46-77, (a) and (b) always expanded at the tip while (c) may be expanded or pointed. Fore legs enlarged, femur and tibia unarmed, tarsus armed with a strong tooth; middle and hind legs normal.

*Abdomen* broader than the pterothorax segments II-V of equal width, thence narrowing to the tube. Tergum I with only 2 pores; evenly reticulate with equal-sided polygonal cells throughout; tergum II usually with no pores between the two microsetae, sometimes with one and rarely with two; tergum III usually with only one pore between the two microsetae; when two are present then they are 20-23 microns apart; each segment faintly reticulate, more distinctly so laterally; tergum IX 74-91 microns long. Tube 0.64-0.67 times as long as the head; about 1.90-1.96 times as long as its greatest basal width which is about twice the apical width;

sides nearly straight. Lateral abdominal setae rather short and knobbed, the longest seta on IX 110—125 microns long; terminal setae shorter than the tube, 120—140 microns long, but longer than those on segment IX.

*Measurements* of female (holotype) in mm. — Length 2.00; head length 0.220, width across eyes 0.181, greatest width across cheeks 0.196, least width at base 0.173; eye, length 0.074, width 0.056, interval 0.069; ocelli, diameter of median 0.023, of posterior 0.018, distance from median to posterior 0.018, interval of posterior pair 0.028; post-ocular setae, length 0.074—0.079, distance apart 0.138; longest cheek spine, length 0.020; prothorax, median dorsal length 0.138, width (including the coxae) 0.354; prothoracic setae lengths, anterior marginal 0.038, anterior angular about 0.061, mid lateral about 0.046, epimeral about 0.064, posterior marginal 0.077, coxal about 0.043; pterothorax, greatest width 0.355; fore wing, length 0.860, greatest width at base 0.087, least width at middle 0.066; subbasal setae lengths, (a) 0.066, (b) 0.069, (c) 0.077; abdomen, greatest width 0.370; tube, length 0.150, greatest width at base 0.078, least width at apex 0.038; longest seta on segment IX, length 0.117; longest terminal seta, length 0.135.

Antennal segments	1	2	3	4	5	6	7	8
Length in microns	43	43	61	72	59	54	46	33
Width in microns	41	36	42	41	33	28	26	13

Total length of antenna . . . . 0.411 mm.

### *Male.*

(Macropterous).

Length 1.94 mm. — Very similar to the female in colour, perhaps a shade darker, with the fore tibiae paler, i.e. yellow slightly tinged with pale brown. In structure the two sexes are also similar, the male differing in the following: slightly smaller size, with abdomen broadest across segment II; prothorax longer, 0.61—0.71 times the length of the head, and 2.13—2.37 times as wide across the coxae as its median dorsal length; anterior angular setae longer, longer than the posterior marginals; third subbasal seta always pointed; tube more abruptly narrowed near the base; the fore femora armed with one tooth near the apex (or sometimes with two), and the fore tibiae armed on the inside with a small tooth at about the basal third.

*Measurements* of male (allotype) in mm. — Length 1.94; head, length 0.215, width across eyes 0.165, greatest width across cheeks 0.183, least width at base 0.160; eye, length 0.069, width 0.051, interval 0.064; post-ocular setae, length 0.066, distance apart 0.133;

longest cheek spine, length 0.015—0.020; prothorax, median dorsal length 0.135, width (including the coxae) 0.320; prothoracic setae lengths, anterior marginal 0.020, anterior angular 0.082, mid-lateral 0.051, epimeral 0.059, posterior marginal 0.079, coxal 0.051; pterothorax, greatest width 0.335; fore wing, length 0.720; subbasal setae lengths, (a) 0.054, (b) 0.061, (c) 0.046; abdomen, greatest width 0.310; tube, length 0.135, greatest width at base 0.077, least width at apex 0.036; abdominal segment IX, length 0.087; spine on IX, length 0.038; longest seta on IX, length 0.107; longest terminal seta, length 0.123.

Antennal segments	1	2	3	4	5	6	7	8
Length in microns	36	43	59	64	56	51	43	36
Width in microns	41	31	39	37	29	24	23	13

Total length of antenna . . . 0.388 mm.

Described from 43 females and 7 males, all macropterous, collected on 9.1.1938 by J. H. Joubert, in curled leaves of *Landolphia capensis* Oliv. at Donkerhoek (about 18 miles east of Pretoria), Pretoria, Transvaal.

In contrast to the downward-curling of the margins of *Ficus* leaves, caused by *Gynaikothrips hirsutus* (Karny), the present species lives on the upper surface and causes the leaf edges to curl upwards.

This new species seems to be most closely related to *schoutedeni* Priesner from the Belgian Congo and to *ugandensis* Priesner from Uganda; from the former it may be separated by (1) the pores between the microsetae on abdominal tergum III when both present being nearer together, 20—23 microns compared with 38—48 microns, (2) the relatively longer tube, 0.64—0.67 times the length of the head, and 1.90—1.96 times as long as the greatest basal width compared with 0.61 and 1.79 respectively, (3) the narrower antennal segment IV in the female, 1.7—1.8 times as long as wide compared with 1.35, and the shorter segment V in the male, less than twice as long as wide compared with more than twice as long as wide and longer than III in *schoutedeni*, (4) the presence of a dark longitudinal line on hind wing, and (5) antennal segments V and VI produced ventrally at the apex. From *ugandensis* the present species may be separated by: (1) antennal segments V and VI produced ventrally at apex, (2) relatively narrower antennal segments III—V in the male, 1.42—1.56, 1.61—1.77, and 1.86—1.93 times as long as wide respectively compared with 1.07, 1.36 and 1.44, (3) one pore on tergum III usually absent but when both present then closer to one another, never more than 23 microns apart compared with up to 28 microns, (4) shorter prothoracic and post ocular setae, (5) presence of a dark longitudinal line on the hind wing. Another species with

which it may be compared is *coffae* Bagnall from Tanganyika Territory; it differs from this species in: (1) the shorter spines on abdominal segment IX in the male, (2) antennal segments V and VI produced ventrally at apex, (3) the smaller eyes, 0.33—0.38, compared with 0.45 times the length of the head, (4) the shorter tube, 0.61—0.67 compared with 0.75. Another closely allied species is *edentatus* sp. n. from which it may be separated by the characters given in the key.

***Elaphrothrips faurei* sp. n. (Pl. III, Fig. 9, 11).**

*Male.*

(Brachypterous).

Length about 3.4 mm. General colour dark brown. Head brown, considerably darker between the eyes, including the process in front of the eyes. Antennal segments I and II same colour as basal portion of head, II becoming yellowish towards the apex; III yellow, with extreme apex slightly shaded with brown; IV yellow, with narrowed portion of apex and extreme base shaded with brown; V yellowish brown for about the apical and basal thirds, the remaining third yellow, darker than either III or IV; VI, VII, and VIII dark brown, VI slightly paler on basal half. Prothorax and pterothorax brown. Abdomen brown to dark brown, gradually becoming darker towards apex. All coxae brown. Trochanters yellow. Femora yellowish brown, the yellowing becoming more pronounced at each end. All tibiae and tarsi yellow. All setae clear or slightly tinged with yellow except the terminal setae of the tube, which are shaded with brown at the base.

*Head* almost exactly three times as long as greatest width, which is near the base, and 3.2 times the width across the eyes; distinctly produced beyond the eyes, the process about 1.3 times as wide at base as median length, 0.41 as long as greatest width of head near base, and nearly as broad at base as at origin of antennae. Small tempora present behind eyes from which the cheeks evenly constrict for a short distance and then widen again until near the base of the head where they abruptly converge to form a slight collar. The length of the cheeks about 2.44 times the least width of the head which is shortly behind the eyes. Vertex of head not overhanging. Ante-ocular setae at least 70 microns in length and about 66 microns apart, more or less pointed; arising about 26 microns from the anterior margin of the eyes. Post-ocular setae about 20 microns long. Post-oculars at least 125 long, 88 microns apart, and 75 microns from the posterior margin of the eyes. Dorsocephalic setae about 35 microns long, 14 microns apart, and arising about 230 and 205 microns from the posterior margin of the eyes. Cheeks with about four pairs of irregularly placed, strong, knobbed spines, the one immediately behind the

eyes being the longest (about 35 microns); with minor setae interspersed between the major pairs. Eyes, prominent but not distinctly protruding; their length slightly more than 0.21 times that of the head; the measurements in the holotype in microns being:

Dorsal: length 140, width 70, interval 65;

Ventral: length 130, width 72, interval 60.

Interval between posterior ocelli about 60 microns, and their distance from median ocellus about 80 microns; they are situated to the inner margin of eyes within about their apical third. Antennae slender, about 1.38 times as long as the head; segment III about 5.9 times as long as its own width and 1.24 the length of IV; IV about 4 times as long as wide and 1.1 the length of V. Sense cones slender, short (outer one on III about 43 microns) distributed as follows: III 1 (1), IV 1 (2) plus 1 ventrally, V 1 (1+2), VI 1 (1), VII 1 on dorsum; the outer sense cone on VI is much shorter than the inner. Mouth cone short, broadly rounded, almost attaining middle of prosternum.

*Prothorax* along median line about 0.33 times as long as head and (including the coxae) about 2.2 times as wide as long; surface smooth; epimeron not fused with pronotum; seta lengths in the holotype in microns: — antero-marginals 38, antero-angulars about 55, mid-laterals about 70, epimerals about 90, postero-marginals about 100, coxals 60. Fore legs enlarged but not extremely so, with three stout spines about 46 microns in length, at basal angle in addition to the usual spines; „sickle shaped” spine present, straight or slightly curved, comparatively weak; foretibiae normal but setae at subbasal angle shorter than width of tibiae; one seta within the apical sixth of tibia longer than width of tibia; setae at apex longer than the rest of the foretibial setae; fore-tarsus with a moderately strong tooth, about equal to width of tarsus in length, and with a slight backward curve. Middle and hind legs normal; the femora possessing knobbed setae, the longest placed about midway between base and apex; the lengths of these mid- and hind-femoral setae 50 and 75 microns respectively; hind-tibiae with a strong apical, dorsal seta (about 50 microns long), in addition to the usual setae. Wings rudimentary, padlike, with two subbasal setae on fore wing rudiment, their respective lengths in the holotype in microns being 50 and 75.

*Abdomen* long and slender at base, slightly wider than the pterothorax. Pores on segment II, 65 microns apart. Lengths of segments VI—IX in microns: 215, 235, 230, 165, respectively; lateral setae on VI 140 microns long and on VIII 105 microns; setae on IX long (440 microns), longer than tube. Tube about 0.6 times the length of the head, and 3 times as long as its greatest basal width, which is about 2.2 times as wide as the least apical width. Terminal setae about 320 microns in length.

*Measurements* of male (holotype) in mm. — Length about 3.37; head, median dorsal length 0.650, width across eyes 0.205, least width behind eyes 0.180, greatest width across cheeks near base 0.220, least width near base 0.205, width across basal collar 0.210; length of head process in front of eyes 0.090, width at base 0.120, width at base of antennae 0.125; prothorax, median length of pronotum 0.215, width (including coxae) 0.480; pterothorax, greatest width 0.420; abdomen greatest width (II segment) 0.460; tube, length 0.370, greatest basal width 0.120, least apical width 0.055.

Antennal segments	1	2	3	4	5	6	7	8
Length in microns	65	68	205	165	150	95	70	80
Width in microns	60 <sup>1)</sup>	40	35	40	35	28	25	15

Total length of antenna . . . 0.898 mm.

### *Female.*

(Brachypterous)

Length 3.6 mm. Body stouter than that of male, but otherwise very similar, departing from the above description only as follows: — head 2.9 times as long as width across eyes and 2.72 times the greatest width near base; head process in front of eyes about 1.4 times as wide at base as its own median length, and 0.38 as long as greatest sub-basal width of head. Cheeks about 2.21 times as long as least width of head just behind eyes, anterior pair of genal spines 20 microns long; the post-ocular in the allotype about 90 microns long, 95 microns apart, and 70 microns from the posterior margin of eye; anteculars about 75 microns long, 74 microns apart, and 26 microns from the anterior margin of eye. Eyes nearly 0.22 the length of the head, their measurements in the allotype in microns being:

Dorsal: length 140, width 70, interval 75;

Ventral: Length 140, width 77, interval 65.

The posterior pair of ocelli are 70 microns apart, and 30 microns from the median ocellus. Antennae about 1.44 times the length of the head; segment III 1.2 times the length of IV and 6 times as long as wide; IV 1.17 times the length of V and 5 times as long as wide. Median pronotal length about 0.34 that of head; pronotal setae measurements in the allotype: antero-marginals 38, antero-angulars 40, mid-laterals 83, epimerals 105, postero-marginals 115, coxals 40. Abdomen stouter than in male but tapering rather than rounding to the tube. Pores on segment II 90 microns apart. Segments VI 215, VII 195, VIII 160, IX 165 microns in length; setae on IX 510 microns long; lateral pairs on VI and VIII 195, 145 microns respectively. Tube about 0.72 the length of the head. Terminal setae about 360 microns in length.

<sup>1)</sup> Basal width.

*Measurements of female (allotype) in mm. —*

Length about 3.6; head, median dorsal length 0.640, width across eyes 0.220, least width behind eyes 0.195, greatest width near base 0.235, least width near base 0.220, width at basal collar 0.225; head process in front of eyes, length 0.090, with at base 0.124, width at base of antennae 0.125; prothorax, median length of pronotum 0.215, width (including coxae) 0.485; pterothorax, greatest width 0.460; abdomen, greatest width (segment II) 0.640; tube, length 0.460, greatest basal width 0.145, least apical width 0.060.

Antennal segments	1	2	3	4	5	6	7	8
Length in microns	50	70	210	175	150	110	73	85
Width in microns	60	40	35	35	35	28	23	15

Total length of antenna . . . . 0.923 mm.

Described from 4 males and 1 female, all brachypterous, collected by Professor J. C. Faure „among fallen leaves”, July, 1936, at Lourenço Marques, Portuguese East Africa. Found together with specimens of *Elaphrothrips orangiae* Jacot-Guillarmod.

I take pleasure in naming this new form for Professor J. C. Faure of the University of Pretoria, who has done much to advance our knowledge of the Thysanoptera of South Africa.

The yellow tibiae and tarsi and the distinctive colour of antennal segment V are outstanding characters. With other African species it can hardly be confused except perhaps with *E. orangiae* Jacot-Guillarmod also from South Africa, which also has yellow middle and hind tibiae and tarsi; from this species it may, however, easily be separated by the colour of the fifth antennal segment, the much shorter dorsocephalic bristles, and the relatively longer head. From the American species *flavipes* (Hood) which also has yellow mid- and hind-tibiae the new species may be separated as follows: — the relatively longer head, the distinct cone overhanging the base of the antennae absent, and the relatively shorter tube. The presence of a „sickle-shaped” spine on the fore-femora of the male of *faurei* also separates it from both the above species.

**Kleothrips (Akleothrips) zuluensis sp. n. (Pl. III, Fig. 10, 12.)***Male.*

## (Macropterous).

Length about 5.0 mm. Colour brown to dark brown except for the following: antennal segment II tinged with yellow at the apex; III yellow, slightly shaded with brown at extreme apex; IV yellowish brown at apex; V ochreous yellow on basal half, apical half brown; VI to VIII brown. All trochanters ochreous yellow; fore-tarsus yellowish brown, the tooth being ochreous yellow. All bristles hyaline.



Wings colourless. Abdomen pale at base, gradually becoming darker towards apex. Tube brown, paler at apex.

*Head* 3.3—3.4 times as long as width across eyes, and 3.1—3.3 as long as the greatest width across cheeks, widest at basal collar in the holotype and at about the basal sixth in the paratype; strongly but gradually narrowed behind eyes and slightly so at base; the width behind eyes 0.77—0.78 of the greatest subbasal width. Produced portion of head 1.9 times as long as its own width at base and 1.5 times its width at base of antennae; 1.28 times as wide at insertion of antennae as at base; 0.90—0.96 as long as the width of the across the eyes; steeply narrowing to near middle and then slightly broadening to base; lateral margins of basal half rather irregular. Cheek 2.4 times as long as the least width of head behind eyes. Lateral and dorsal surface of head transversely striate. About 3 pairs of prominent cheek spines plus about 5 pairs of lesser ones present, the 1st situated immediately behind the eyes is the longest, each measuring about 66—77 microns. Ante-ocular setae slightly more than half the dorsal length of the eye, their measurements in the holotype in microns: length 77, distance apart 79, distance from anterior margin of eye 59. Post-oculars about equal in length to the post-oculars whose measurements in the holotype in microns are: length about 25, distance apart 132, distance from posterior margin of eye 87. Dorsocephalic setae about twice as long as the post-oculars, the measurements in the holotype in microns being: length 51, distance apart 105, distance from posterior margin of eye 235. Eyes prominent, bulging, about 0.18 times the length of the head, the measurements in the holotype in microns:

Dorsal: length 145, width 70, interval 100;

Ventral: length 105, width 80, interval 80.

Ocelli of posterior pair situated slightly in front of middle of eye; anterior ocellus much smaller than posterior; measurements in holotype in microns; diameter of posterior ocellus 20, of anterior ocellus 8; interval between posterior ocelli 75; distance from anterior ocellus to posterior ocellus 95. Antennae about 1.5 times as long as head, slender; segment III, 6.96—7.07 times as long as wide and 1.39—1.42 times as long as IV; IV, 4.96—5.1 times as long as wide and 1.46—1.47 times as long as V; segments V and VI produced ventrally at apex, the produced part more distinct in VI. Sense cones well developed, pointed, the outer cone on III about 33 microns in length; the respective sense cones distributed as follows: III 1 (1), IV 1 (2) plus 1 ventrally, V 1 (1 + 1), VI 1 (0 + 1), VII 1 on dorsum. Mouth cone rounded, reaching about middle of prosternum.

*Prothorax* 1.7 times as wide (including coxae) as long and about 0.4 times as long as head; surface smooth; median thickening present; all usual setae present, pointed excepting those on the

epimera which are slightly expanded at the tip. The epimeral setae at least twice as long as any of the other setae; the anterior angulars, arising from a slight prominence, rather weak, equal to the mid-laterals but shorter than the postero-marginals. Measurements of the prothoracic setae of the holotype in microns: anterior-marginals 30, anterior-angulars 35, mid-laterals 35, epimerals 110—115, posterior-marginals 65, coxals 75. Wings of equal width throughout, with a slight forward curve; about 36 duplicated cilia present on the posterior margin of the fore wing; all subbasal setae of fore-wing pointed, (a) and (b) subequal to one another and to the posterior-marginals of the prothorax; (c) about 1.7 times as long as (a) or (b), shorter than the prothoracic epimerals; their measurements in holotype in microns: (a) 55, (b) 55, (c) 80. Fore femora enlarged, provided with a tooth on the inner side near the apex and in addition a forwardly-curved process on the inner side at about the middle. (In the paratype in addition to the forward curve the process has a slight backward curve at the tip). Fore tibia on the inner side at the apex with a bristle-bearing tooth; subbasal tooth absent. Fore tarsus with a long, straight acute tooth, arising at right angles to tarsus and about 1.25 times as long as the width of the tarsus. Middle and hind legs normal for the genus. Pterothorax wider than prothorax (including coxae), finely reticulate along the sides.

*Abdomen* long and slender, probably broadest at segment II from which it gradually narrows to tube. Segment VIII about 1.46 times as long as IX. Tube about 0.76 as long as head, and 1.57—2.0 times as wide at base as at apex. Length of longest seta on IX about 300 microns in holotype and longest terminal seta on tube about 330 microns.

*Measurements* of male (holotype) in mm. — Length about 5.0; head, median dorsal length 0.790, width across eyes 0.240, least width behind eyes 0.200, greatest width across cheeks 0.255, width at basal collar 0.260; head process, length 0.215, width across base 0.113, least width 0.100, width at base of antennae 0.145; prothorax, median length of pronotum 0.290 width (including coxae and coxal tubercles) 0.560; fore-femur, length about 0.600, greatest width 0.250, median tooth, length about 0.130, apical tooth length about 0.040; fore tibia, length about 0.460; tarsal tooth, length 0.100, width at base 0.020; pterothorax, greatest width 0.620; fore-wing, length 1.860, width at middle 0.145; abdominal segment VIII, length about 0.350, width about 0.270; segment IX, length about 0.240, width about 0.190; tube, length about 0.600, greatest basal width 0.105 least apical width 0.067.

Antennal segments	1	2	3	4	5	6	7	8
Length in microns	75	84	325	233	160	113	70	70
Width in microns	69	51	46	47	43	38	31	20

Total length of antenna . . . 1.13 mm.

*Holotype*, male: Hluhluwe, Zululand, 24-1-1937, „found on car after having driven through long grass” (*C. Jacot-Guillarmod*).

*Paratype*, 1 male: White Umfolosi, Zululand, 1922 (*R. H. Harris*)

The paratype is generally larger (head length 0.860 mm.); it differs from the holotype in the distances of the ante- and post-ocular setae from the eye compared with the distance from each other, and in the larger, slightly differently shaped projection on the fore femora; otherwise it agrees very closely with the holotype.

This species has been placed in the subgenus *Akleothrips* Priesner on account of the large projection on the middle of the inner margin of the fore-femora in addition to the apical tooth; it may, however, easily be separated from *karimponensis* Priesner from Java, the subgenotype by the following points: the colourless wings and the smaller number of duplicated cilia on the fore-wing (35—37 compared with 48—52); additional projection on forefemora situated in the middle instead of the basal third, larger and differently shaped; antennal segments relatively broader; antero-angular and mid-lateral setae on prothorax very weakly developed. The new species comes, however, closest to *separatus* Hood from East Africa which, although the male is not yet known, should probably also be included in the subgenus *Akleothrips*. The South African species differs from the East African form in the narrower head. (3.10—3.25 times as greatest width across cheeks compared with 2.76); the longer head process (1.90—1.92 times as long as width at base, compared with 1.63); antennal segments VII and VIII of the same length, whereas VII is slightly longer than VIII in *separatus*; abdominal segment VIII about 1.5 times as long as IX compared with 1.1.

## PL. I.

- Fig. 1. *Hoplandrothrips arrhenus* sp. n. right antenna of female paratype.  
Fig. 2. *Hoplandrothrips arrhenus* sp. n. head, prothorax, and fore legs of female paratype (all setae on legs omitted).  
Fig. 3. *Hoplandrothrips vansoni* sp. n. head, prothorax, and fore legs of female paratype (all setae on legs omitted).  
Fig. 4. *Hoplandrothrips vansoni* sp. n. right antenna of female paratype.

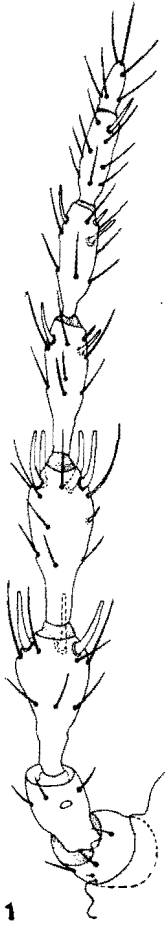
## PL. II.

- Fig. 5. *Hoplandrothrips landolphiae* sp. n. right antenna of male allotype.  
Fig. 6. *Hoplandrothrips landolphiae* sp. n. head, prothorax, and fore legs of male allotype (all setae on legs omitted).  
Fig. 7. *Hoplandrothrips edentatus* sp. n. head, prothorax and fore legs of male holotype (all setae on legs omitted).  
Fig. 8. *Hoplandrothrips edentatus* sp. n. right antenna of male holotype.

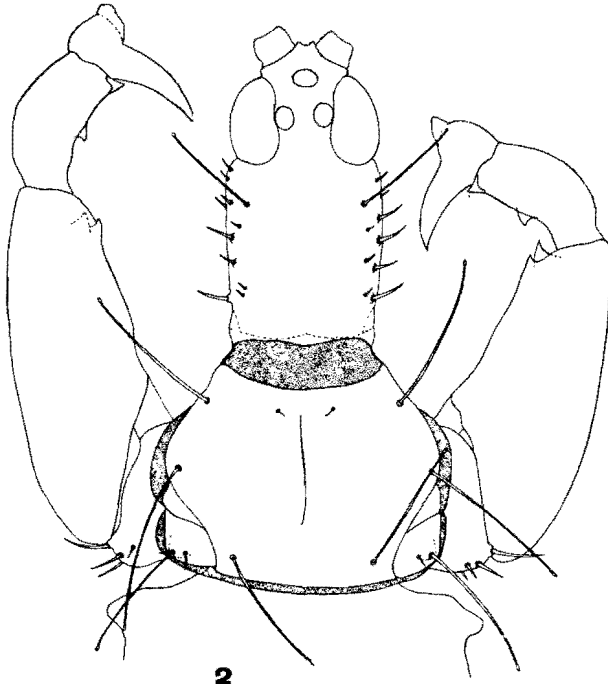
## PL. III.

- Fig. 9. *Elaphrothrips faurei* sp. n. left antenna of male holotype.  
Fig. 10. *Kleothrips* (*Akleothrips*) *zuluensis* sp. n. head, prothorax and fore legs of male holotype.  
Fig. 11. *Elaphrothrips faurei* sp. n. head, prothorax and fore legs of male holotype.  
Fig. 12. *Kleothrips* (*Akleothrips*) *zuluensis* sp. n. left antenna of male holotype.

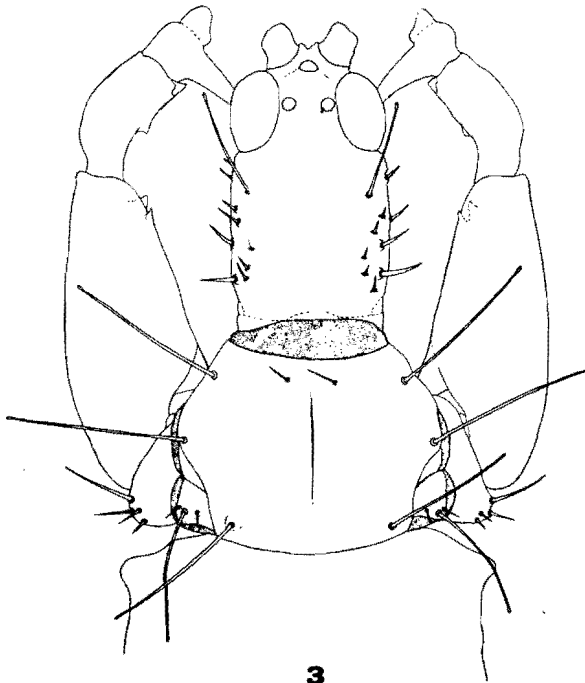
Plate I.



1



2



3



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Plate II.

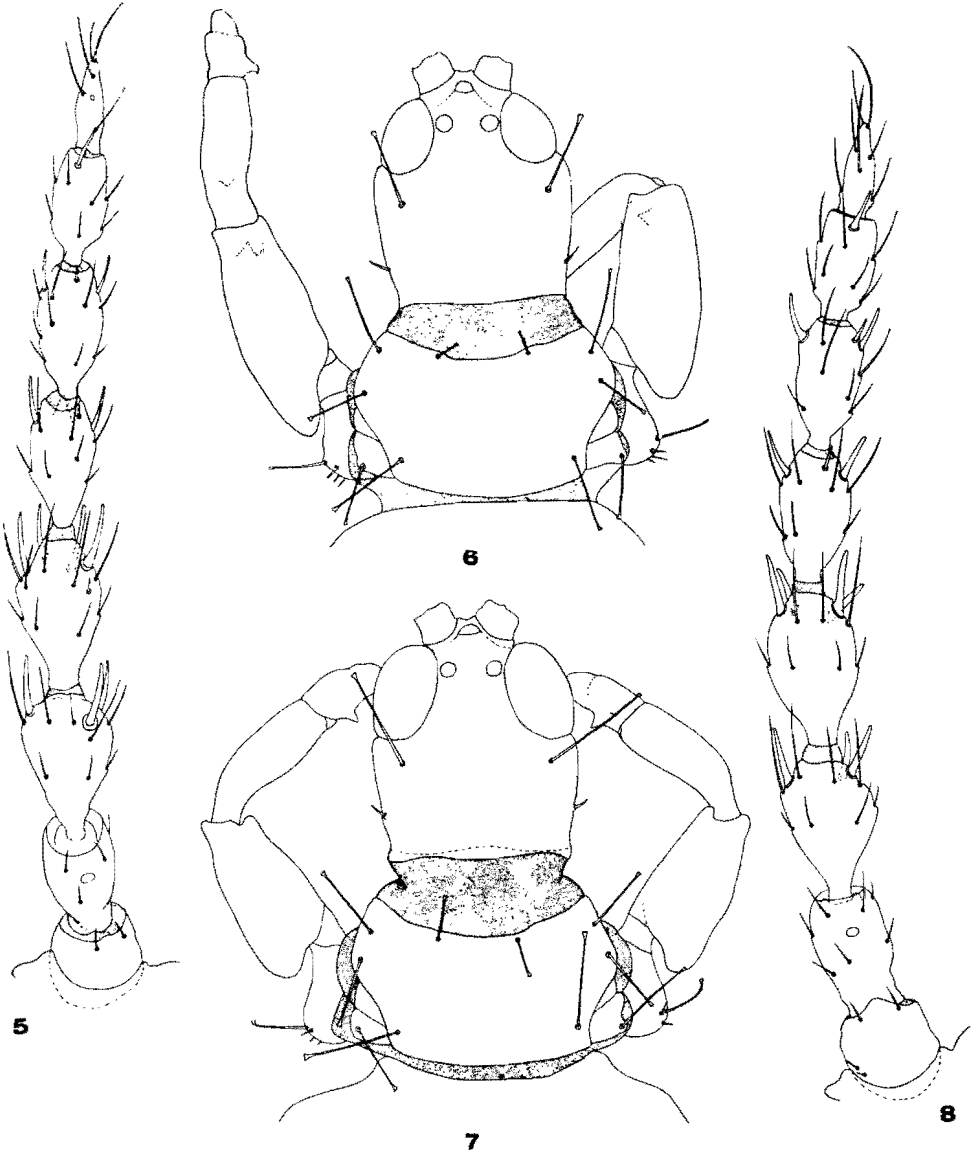


Plate III.

